

AMENDMENTS TO THE CLAIMS

Following is a listing of all claims in the present application, which listing supersedes all previously presented claims:

Listing of Claims:

1. (Currently Amended) A method for analyzing a sample by employing a Fast Fourier Transformation method, comprising:  
  
generating an image of a region of the sample to be analyzed;  
  
generating data having a frequency from a plurality of portions of the image by the Fast Fourier Transformation method; and  
  
determining whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample; and  
  
providing an alarm when the region is abnormal.
2. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the region includes a periodically formed pattern.
3. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the region is formed on a semiconductor substrate and corresponds to a cell region including a periodic pattern.
4. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 3, wherein the periodic pattern has a line width and is formed by an etching process.

5. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein the image is generated by a scanning electron microscope.

6. (Original) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, further comprising defining the image into at least two pixel units.

7. (Cancelled) .

8. (Currently Amended) A method for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

generating a magnified image of a minute pattern formed in a cell region of a semiconductor substrate;

measuring a line width of the minute pattern using the magnified image;

generating data having a frequency from a plurality of portions of the image by the Fast Fourier Transformation method; and

determining whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample,

wherein measuring the line width of the minute pattern and generating data having a frequency from a plurality of portions of the image are simultaneous.

9. (Currently Amended) An apparatus for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

an image generation part for generating an image of a region of the sample to be analyzed;

a data generation part for generating data having a frequency from a plurality of portions of the image by the Fast Fourier Transformation method; ~~and~~

a data discrimination part for determining whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample; and

an alarm part for providing an alarm when the region is abnormal.

10. (Original) The apparatus for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 9, wherein the image generation part includes a scanning electron microscope.

11. (Original) The apparatus for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 9, further comprising a display part for displaying the generated data.

12. (Cancelled).

13. (Currently Amended) An apparatus for analyzing a sample by employing a Fast Fourier Transformation method, comprising:

a scanning electron microscope for generating a magnified image of a minute pattern formed in a cell region of a semiconductor substrate;

a line width measurement part for measuring a line width of the minute pattern using the magnified image;

a data generation part for generating data having a frequency from a plurality of portions of the magnified image by the Fast Fourier Transformation method; and

a data discrimination part for analyzing the generated data from the plurality of portions of the image to determine whether the region is normal or abnormal based on a comparison of portions of the data generated by the Fast Fourier Transformation method without using a separate reference sample;

wherein measuring the line width of the minute pattern and generating data having a frequency from a plurality of portions are simultaneous.

14 - 17. (Cancelled)

18. (Previously Presented) The method for analyzing a sample by employing a Fast Fourier Transformation method as claimed in claim 1, wherein analyzing the generated data includes using solely the data generated from the image.

19. (Cancelled).

20. (Previously Presented) The apparatus as claimed in claim 13, wherein the data discrimination part is configured to use solely the data generated by the data generation part with respect to the magnified image.